Harris County
Public Health
Building a Healthy Community

East Aldine District's Town Center Development:
A Health Impact Assessment in Harris County, Texas

ACKNOWLEDGEMENTS

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EAST ALDINE DISTRICT'S TOWN CENTER DEVELOPMENT HEALTH IMPACT ASSESSMENT EXECUTIVE SUMMARY

WHAT IS A HEALTH IMPACT ASSESSMENT (HIA)?

A HIA is a tool to help inform decision makers about the health impacts of proposed policies, programs, or projects. A HIA identifies solutions to reduce any negative health effects and optimize beneficial health outcomes. The systematic process typically involves six steps and uses a variety of data sources, including input from stakeholders and community members.

WHO PERFORMED THIS HIA?

In partnership with the East Aldine Management District through a memorandum of understanding, Harris County Public Health received support to conduct this HIA through a grant from the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts, with funding from the Episcopal Health Foundation on June 23, 2015.

WHY WAS A HIA PERFORMED?

East Aldine District (EAD) residents have voiced the need for greater access to services and amenities, including a grocery store and health clinic. EAD proposed to develop a town center that would provide these services and amenities to its community members. The HIA Team determined through the HIA screening process that the town center proposal had the potential to impact the community's overall health and wellbeing. The HIA's main goal was to inform decision makers on the potential health impacts and associated health costs of the proposed town center.

WHO MAY BE IMPACTED BY THE PROPOSED TOWN CENTER?

As the district's first HIA, it is a call-to-action to ensuring the community's quality of life, economic growth, and health are explicitly and equitably considered in its decision-making. The proposed town center will most likely have a health impact on those living near the site and those needing access to services and amenities within the center. Populations who are unable to access the town center amenities without a car will be disproportionately impacted given the current lack of safe pedestrian access to the town center. Community stakeholders identified vulnerable populations, such as school-aged children, one-car households, older adults, and those with disabilities as being especially impacted.

WHAT METHODS WERE USED IN THIS HIA?

The HIA Team utilized a mixed methods approach to evaluate the potential for the proposed town center to affect the health of community members. The assessment consisted of: (1) a systematic literature review of selected built environment features and their impact on health; (2) primary data collection and analysis of existing infrastructure and connectivity near the town center site; (3) analysis of existing health data for EAD; (4) consultation with experts and stakeholders, including key informant interviews and focus groups with community members; and (5) economic and health impact analyses of proposed town center countermeasures, points of interest, and amenities.

WHAT ARE THE MAIN HIA FINDINGS?

The HIA findings show the proposed town center may result in the following community health impacts:

- **Increased Physical Activity Levels may Increase Life Expectancy for the EAD Community, Resulting in $2.7 Million in Chronic Disease Costs Averted.** The health benefits from increased physical activity are expected to reduce the incidence of heart disease, diabetes, asthma, breast cancer, and colon cancer. These benefits are measured by overall disease burden for the EAD population and are expected to increase life expectancy by 1.46 years for community members. This will result in a total of $2.7 million in healthcare costs averted over the next 30 years after the completion of the town center.

- **Improved Access to Recreational Facilities.** Given the current evidence of low physical activity levels among youth in EAD, additional recreational facilities will possibly promote and encourage increased physical activity among youth and adult community members.
- **Pedestrian-Vehicle Injuries may Increase and Cost EAD $4.4 Million.** Vehicular traffic is expected to increase along Aldine Westfield Road, Aldine Mail Route, and side streets near the town center. A number of pedestrian-vehicle crashes have occurred along Aldine Mail Route, especially near the five schools on this street. This HIA predicts an increase of 13 additional pedestrian-vehicle collisions over the 30 years after the town center is developed. The predicted costs associated with this increase include wage productivity losses, medical expenses, administrative expenses, motor vehicle damage and employers' uninsured costs.[1] These expenses will cost EAD a conservative estimate of $4.4 million.
- **Improved Access to Healthy Foods.** Given the fact that EAD is currently listed as a food desert by the United States Department of Agriculture, including a grocery store in the town center will most likely have a positive health impact on the community by providing better access to fresh foods. The full health impact is conditional on other factors, such as food quality offered, cleanliness and attractiveness of the store, pricing, placement, and promotion strategies that support healthy eating behaviors.
- **Improved Access to Healthcare.** Given the strong scientific evidence, inclusion of Vecino Health, a Federally Qualified Health Center in the town center is likely to result in positive health impacts on the EAD population by providing greater access to affordable healthcare. This health impact could have potential additive effects if EAD coordinates with Vecino Health to leverage other town center amenities and services, such as partnering with the grocery store to implement a Fruit and Vegetable Prescription Program.

NON-HEALTH BENEFITS FOR EAD INCLUDE:

- **$13.6 Million Increase in Property and Sales Tax Revenue.** Increased walkability has been linked to increased property tax values[2] (Cortright, 2009). The town center development is expected to increase the Walk Score® of properties within walking distance to the town center by 21 points. This will result in an increase in the average home value within walking distance of the town center from $102,000 to $115,470. The tax revenue generated from this increase over 30 years is expected to sum to $13.4 million. In addition, stores located near areas with cycling improvements have been shown to increase sales by 49% to over 400%.[3] Assuming EAD considers and implements additional pedestrian and bicycle transportation access improvements, the district will likely see an estimated 80% sales increase (a conservative estimate). This will result in a $207,887 increase in the 1% sales tax revenue EAD receives as part of the local government code for planning and development, which will accrue to $13.6 million in property and sales tax revenue over the 30-year period.

WHAT SHOULD EAD DO TO ENHANCE OR MANAGE THESE HEALTH IMPACTS?

To enhance the predicted health benefits of the town center and mitigate the negative impacts, EAD may want to consider the following:

- **Pedestrian Injury:** To prevent additional pedestrian injuries and deaths, EAD should oversee and promote implementation of appropriate crash reduction factors (CRFs) along Aldine Mail Route, Aldine Westfield Road, and within the one mile HIA study radius surrounding the town center site. EAD can obtain detailed crash reports from the Houston-Galveston Area Council and Harris County Sheriff's Office. When analyzed, this information can be used to outline effective CRF solutions that can reduce injury and death, as well as accommodate traffic flow. This can be in conjunction with prioritizing implementation of alternative routes on less busy streets or in the form of trails.

- **Physical Activity:** EAD should consider working with local stakeholders and partners to create a more appealing environment for pedestrians and bicyclists to promote increased community physical activity levels. Future funding investments should consider expanding the current network of sidewalks, trails, and bikeways from the town center to surrounding neighborhoods to encourage physical activity and active transportation to and from the town center. Additionally, local community advocates could work on changing the attitudes about walking, biking and active transportation in the community. As the town center development presents a purpose for more trips by active transport, health advocates should stress this opportunity to incorporate physical activity into daily life.
- **Safety:** To make the area more attractive and comfortable for pedestrians and bicyclists, EAD should maintain and continue to strengthen their current partnership with local law enforcement and implement various crime reduction measures. For example, EAD and the City of Houston (COH) can partner with local law enforcement to increase safe access from the town center to COH's Keith-Wiess Park through wide, defined trails with adequate lighting, visibility, and bike patrols.
- **Healthy Food Access:** EAD may want to consider increasing or creating funding and incentives for a quality and affordable grocery store to open in the town center. For example, a public-private partnership to increase healthy food access. EAD should also continue its existing partnerships with programs that work to change unhealthy eating habits, such as Harris County Public Health's Healthy Dining Matters and expanded efforts with the proposed Neighborhood Centers, Inc. café within the town center site.
- **Access to Healthcare:** Through EAD's Public Health & Neighborhood Services Committee, engagement of community health workers to promote linkages between Vecino Health and EAD community resources would be beneficial. This would especially benefit adults with high blood pressure and adults with prediabetes or at high risk for type 2 diabetes. For example, working with Vecino Health to provide prescriptions for fresh produce from the proposed town center grocery store, also known as a Fruit and Vegetables Prescription ("FVRx®") Program, should be encouraged.

WHAT ARE THE NEXT STEPS?

A comprehensive planning approach for the district could work to prioritize infrastructure for active transportation throughout the community including integrated network of trails, pedestrian-oriented lighting, continuous sidewalks separated from vehicular traffic, protected pedestrian street crossings, and other safety features as evidenced by active transportation experts. This would help facilitate walking and biking throughout the community and also enhance safe access to the town center. Additional efforts to address safety in the area may help facilitate positive attitudes towards physical activity and walking for transportation to the site. Safety efforts could include expanding EAD's current focus on Crime Prevention through Environmental Design (CPTED), not only in apartment complexes, but in the town center area and throughout the surrounding neighborhoods.

Lastly, Harris County Public Health, in collaboration with internal staff from other departments, will continue to track and monitor the progress of the town center development and its predicted health outcomes identified by this assessment.

INTRODUCTION & BACKGROUND

GOAL OF THE EAST ALDINE DISTRICT HEALTH IMPACT ASSESSMENT

The goal of this HIA is to help inform decision makers on the potential health impacts of a proposed town center development and affiliated mobility-related infrastructure improvements in East Aldine District (EAD), Texas.

WHAT IS A HEALTH IMPACT ASSESSMENT (HIA)?

A HIA is a tool to help inform decision makers about the health impacts of proposed policies, programs, or projects and identify solutions to reduce any negative health effects and optimize beneficial health outcomes. The systematic process typically involves six steps and uses a variety of data sources, including input from stakeholders and community members.

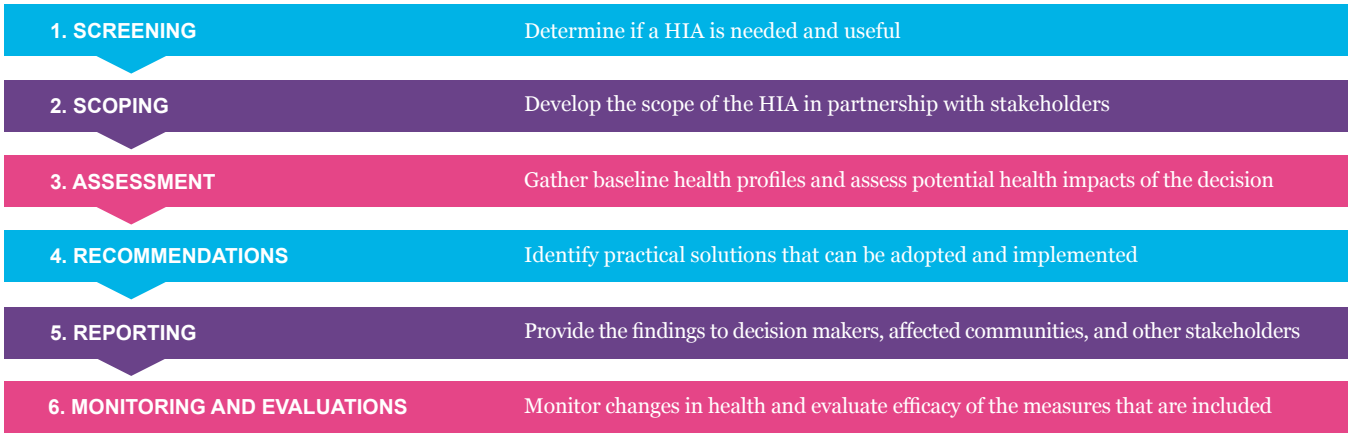


Figure 1

Health Impact Assessment Process

Source: Adapted from the Health Impact Project, HIA Process: http://www.pewtrusts.org/en/projects/health-impact-project/health-impact-assessment/hia-process

In partnership with the East Aldine Management District through a memorandum of understanding, Harris County Public Health (HCPH) received support through a grant from the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts, with funding from the Episcopal Health Foundation on June 23, 2015 to conduct a HIA on the town center development in EAD.

OVERVIEW OF EAD'S TOWN CENTER DEVELOPMENT

EAD, along with a number of consultants and agencies, proposed to develop a 61-acre town center with social and community services and retail businesses on a previously vacant property. The town center will be located on a major thoroughfare, Aldine Mail Route Road, directly east of Stephens Elementary School, west of Fall Meadows neighborhood and north of Keith-Wiess Park, a 500-acre park. The proposed town center services and amenities include:

- Lone Star College campus offering technical courses, associate degrees, and workforce certificates which will serve an estimated 1,500 students
- Recreational spaces including walking trails, open space, and a playground
- An amphitheater for seasonal performances, fairs, and community-wide events
- Neighborhood Centers, Inc. Community Center providing services for community development, such as a makerspace (i.e., a space where people can gather to create, invent, and learn), workforce development and civic engagement classes, and afterschool youth programs

- Vecino Health Centers, a Federally Qualified Health Center, serving as a primary care facility for the community
- The EAD Community Civic Center serving as a hub for district staff and related business (e.g., board and committee meetings)
- Harris County 9-1-1 Call Center, which is also a designated emergency shelter for the Harris County Sheriff's Office
- Grocery and retail fronting Aldine Mail Route Road

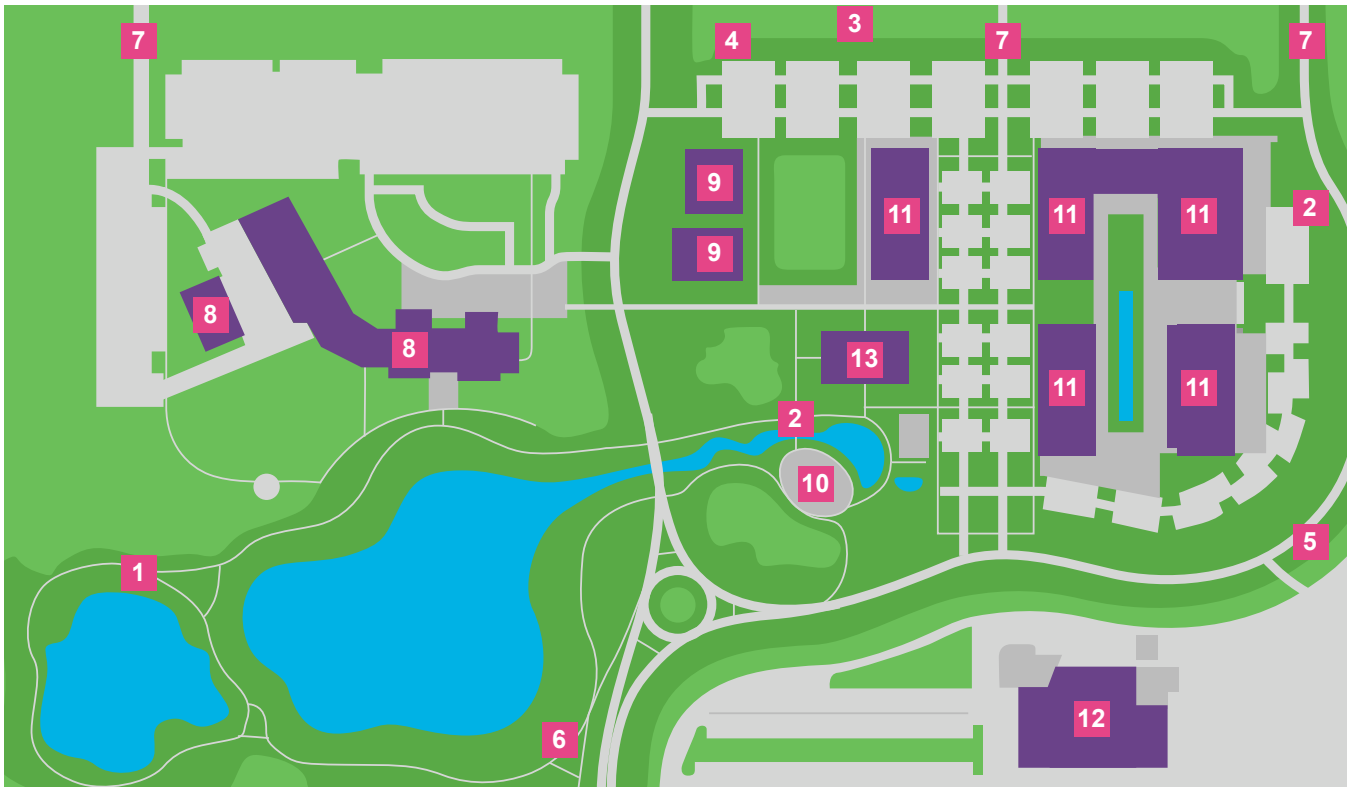
In addition to these programmed spaces, the town center designs plan for the following additional components:

- Three access points by car along Aldine Mail Route Road
- A signalized left-hand turn lane and pedestrian crossing for the main entry
- A pedestrian entry from the High Meadows neighborhood
- Trail connection into Keith-Wiess Park to the south
- The interior town center road with pedestrian crossings
- Landscape and lighting

All of these components were considered when assessing the health impacts of the town center development and are outlined in *Figure 2*.

Figure 2

TOWN CENTER DEVELOPMENT



1	Walking Trails	5	Entrance from Fall Meadows Lane	9	Neighborhood Centers, Inc.	12	Harris County 911 Call Center
2	Sidewalks	6	Trail Connection South to Park	10	Amphitheater		
3	Left Turn Lane In	7	Additional Entries	11	Retail	13	EAD Civic Center
4	Main Entry	8	Lone Star College				

ABOUT EAD

EAD is located in unincorporated Harris County, 10 miles north of downtown Houston and just south of Bush Intercontinental Airport. With approximately 50,000 residents, the management district was established by the Texas State Legislature in 2001 as a governmental entity to enhance the physical, social, and economic well-being of the community.

Given EAD is completely surrounded, but was never incorporated, by the City of Houston (Figure 4, page 10), development and management of services are sustained by a 1-cent sales tax on retail sales and are guided by service plans to identify and respond to issues and improvements needed. While the City of Houston is required to provide sewer, water, and trash services to areas within its jurisdiction, communities in unincorporated Harris County, such as EAD, rely on a variety of mechanisms, such as Public Utility Districts and Municipal Utility Districts, to provide basic services. Historically, a rural area, homes and developments in EAD utilized septic tanks and well water. As EAD became more urbanized, the need for basic services became increasingly evident, and it was the management district that has worked to strategically organize water and sewer services to local neighborhoods. The district also utilizes a number of committees to drive priorities for the community including Safety, Public Health and Neighborhood Services, and Economic Development. These efforts have culminated in the opportunity to fund and build the 61-acre town center site which will focus on social and community services but will also feature retail and commercial space.

PLANNING FOR IMPROVED MOBILITY IN EAD

Using a number of existing reports and plans, including the traffic study conducted for the town center development and EAD's 2007 Mobility, Signage and Landscaping Master Plan (referred to as "Mobility Master Plan (MMP)" from here on), a number of projects were identified by EAD staff and their consultants to improve mobility and access to the town center. In this report, "mobility" refers to the ability to move easily and safely for all modes of transportation (e.g., walking, biking, riding a bus, or driving a car) and for people of all abilities (e.g., older adults, children, and people with disabilities). The MMP identifies transportation improvement needs for EAD. This information is given to the Houston-Galveston Area Council, which contacts local governments for updates to the Regional Transportation Plan (RTP) every few years. All regionally significant projects must be submitted and included in the RTP in order to receive state or federal funding. Health considerations were not originally incorporated into the MMP and much of the EAD infrastructure context has changed since 2007, including the new town center. EAD is planning an update of the plan in order to better address the mobility concerns as they relate to the town center and other changes in EAD.

A HEALTHY EAD

Through the HIA process, community members developed two definitions of what a healthy EAD meant to them:

"A healthy EAD is a place with clean environments and opportunities to reduce hazards. It has safe places to be in and play in nature. There are positive places to gather, and it is supportive of physical, mental, emotional, and spiritual health. It also provides accessible resources for healthy lifestyles for all." – EAD HIA Stakeholder Workshop

"Our community is a healthy community when it consists of a safe, clean neighborhood and environments to walk, clean air, parks and trees, as well as options to shop for our everyday needs (e.g., healthy foods, books, clothes). It should be designed for the well-being of our diverse community members."

– EAD HIA Photovoice Youth Community Leaders Project

The MMP includes a number of short- and long-term project proposals, for example, consolidation of commercial driveways between Chrisman Road and Slaters Road and construction of left turn lanes on both roadways at the intersection of Aldine Mail Route and Aldine Westfield Road. Projects under the jurisdiction of the City of Houston that run through EAD may also be outlined in the City of Houston Capital Improvement Plan (CIP) as funding becomes available. For example, the current CIP proposes to expand Aldine Westfield Road into a six-lane, divided concrete roadway with sidewalks where a two-lane roadway currently exists from Aldine Mail Route to Little York Road. This is significant to the town center development because Aldine Westfield Road is the closest major thoroughfare to the town center after Aldine Mail Route. It runs adjacent to Keith-Wiess Park and crosses Halls Bayou (Appendix B, Figure B-1). These plans were useful in helping to identify infrastructure-related projects and plans that may impact the town center.

A CALL TO ACTION: CONSIDERING HEALTH AS PART OF THE DEVELOPMENT PROCESS IN EAD

Health begins long before illness occurs, in our homes, schools, and communities – where we live, learn, work, worship, and play. EAD's first HIA is a call-to-action to ensuring the community's quality of life, economic growth, and health are explicitly considered in their decision making. EAD staff have expressed a number of service and infrastructure concerns, such as: water and sewer[4]; trash pickup[5]; flooding[6]; and pedestrian-vehicle injury and death[7]. The latter, as it relates to mobility and transportation services, has been voiced as a concern not only by EAD staff, but also by community residents (Figure 3), given the new town center and the anticipated traffic increase predicted by the traffic impact study[8]. Recent pedestrian-vehicle deaths in the area have revealed mobility safety issues as well, especially for at-risk populations (e.g., children, adolescents, elderly, and disabled). The lack of safe pedestrian access to the new town center (Appendix B, Figure B-2) may present some challenges. However, district staff have emphasized that creating a safe and healthy sense of place with increased pedestrian access throughout EAD is a top priority. In 2006, EAD, Texas Department of Transportation, and Harris County completed a project that added 12.8 miles of sidewalks along both sides of Aldine Mail Route, from U.S. Route 59 to the Hardy Toll Road. To the HIA Team's knowledge, this was the last major investment in pedestrian infrastructure in the proposed town center area. The town center development has the potential to further improve the built environment in terms of pedestrian infrastructure among other improvements (e.g., greater access to services and amenities) and promote healthy behaviors, such as walking, that will ultimately improve health and prevent chronic disease outcomes.

HIA OBJECTIVES

Two primary objectives of the HIA were to (1) identify potential health outcomes associated with the proposed town center, especially as they relate to mobility and access; and (2) examine how proposed infrastructure projects associated with the town center could improve community connectivity and access to the town center amenities. Table 1 provides a dictionary of terms relevant to these objectives and are used throughout this report.

ASSESSMENT SCOPE AND METHODS

The HIA Team utilized a mixed methods approach to evaluate the potential of the town center development and affiliated infrastructure improvements to affect behavioral risk factors and health outcomes among community members. The assessment consisted of the following components: (1) systematic literature review of selected built environment features and their impact on health; (2) analysis of existing infrastructure and connectivity around the town center site; (3) analysis of existing health data for EAD; (4) consultation with experts and stakeholders, including key informant interviews and focus groups with community members; and (5) economic and health impact analysis of proposed town center countermeasures and built environment features, points of interest, and amenities. For details on the methodology, see the Technical Appendix.

TABLE 1: DEFINITIONS APPLICABLE TO THE EAD HEALTH IMPACT ASSESSMENT (CDC A, 2013)*	
ACCESSIBLE/ACCESSIBILITY	Accessibility refers to a person's overall ability to reach goods, services, activities, and destinations, and thus, the time and money that people and businesses must devote to transportation.[9]
ACTIVE TRANSPORTATION	Active transportation is any self-propelled, human-powered mode of transportation, such as walking or bicycling. See also Non-motorized transport.
BUILT ENVIRONMENT	The buildings, roads, utilities, homes, fixtures, parks and all other man-made entities that form the physical characteristics of a community.
CONNECTIVITY	The ease of travel between two points. The degree to which streets or areas are interconnected and easily accessible to one another. An example of high connectivity would be a dense grid pattern in a downtown area.
INCIDENCE (INCIDENCE RATE)	Occurrence of new cases of disease or injury in a population over a certain amount of time[10]
MIXED LAND USE	A range of complementary land uses in the same area, including shops, residences, employment communities, recreational facilities, parks, and open space.[11] In the literature review conducted for this HIA, mixed land use was defined as the number of points of interest in close proximity (between 400m and 1600m) to the home. Points of interest were commonly defined as institutional (e.g., church, library, post office, bank), maintenance (e.g., grocery store, convenience store, pharmacy), eating out (e.g., bakery, pizza, ice cream, take out), and leisure (e.g., health club, bookstore, bar, theater, video rental).[12]
MOBILITY	Mobility refers to the ability to move easily and safely for all modes of transportation (e.g., walking, biking, riding bus or rail) and for people of all abilities (e.g., older adults, children, and people with disabilities).
NON-MOTORIZED TRANSPORT	Walking, cycling, and their variants. Non-motorized transportation tends to be more affordable and resource-efficient than alternative forms of transportation and recreation.[13]
POINT OF INTEREST	Frequented or desirable destinations within a neighborhood, such as schools, recreational facilities, stores, places of worship, etc.
PREVALENCE (PREVALENCE RATE)	Proportion of people in a population who have a certain disease or attribute at a certain point in time or over a specified time period.[14] Prevalence differs from incidence in that prevalence includes new and preexisting cases in the population at the specified time, while incidence includes only new cases.

*Unless otherwise indicated, definitions listed in this table were obtained from the Centers for Disease Control and Prevention: Healthy Places Terminology.[15]

CURRENT CONDITIONS

HEALTH ISSUES IDENTIFIED BY STAKEHOLDERS IN EAD

Eleven key informant interviews were conducted during the scoping phase of the HIA and were integral in identifying and prioritizing a number of health and safety issues in EAD (Appendix C). The key informants included community leaders, local content experts, and other decision makers. The word cloud (Figure 3) was developed from responses to the question, "What are the most important health and safety issues that need to be addressed in this community?" Themes that were more common among respondents appear in larger text in the word cloud than themes that were less common. The most common themes were: access to healthcare, pedestrian infrastructure, healthy food choices, lack of transportation, crime, and lack of physical activity. Transportation equity, including access to affordable, convenient, and safe transportation options, is a big concern in this community[16]. Mobility limitations and proximity have been shown to negatively impact access to fresh foods (e.g., fruits and vegetables),[17] health care,[18] other social services,[19] and overall quality of life,[20] especially among older adults.[21] This was an issue raised in a key informant interview by a housing service provider for older adults (ages 55+) in the EAD community. Given the complexity of each of these issues and the multiple contributing factors involved, the HIA Team systematically included stakeholder information in the assessment, along with information published in the scientific literature, to predict potential health impacts.

Figure 3

Key Health Issues Identified by EAD Stakeholders, 2015-16

BASELINE HEALTH CONDITIONS

In 2010, seven out of the ten leading causes of death in the U.S. were due to chronic diseases,[22] with heart disease remaining the number one cause of death in the U.S. since 1921.[23] Premature death, which refers to the years of potential life lost before the age 65,[24] in Texas in 2010 were: death by accident, malignant neoplasms, diseases of the heart, certain conditions originating in the perinatal period, suicide, and homicide.[25] The overall life expectancy for Texas residents in 2010 was 78.1 years (75.7 for males and 80.5 for females).[26]

In the Aldine area, which is a Census Designated Place and was used as a proxy for the EAD area (Figure 4), eight of the ten leading causes of death were similar to Harris County and Texas, with the exception of homicide and suicide replacing Alzheimer's disease and flu/pneumonia (Table 2; and Appendix A: Community Health Profile). There were also slight differences between Aldine and Harris County in the categories of: overweight and obesity (combined; Body Mass Index ≥25), mental health, cardiovascular disease (CVD), and asthma (Figure 5). However, these differences may not be significant given the number of adults sampled in the Aldine area was small (n=51 respondents) and may not truly reflect the rest of the population, especially since Aldine was used as a proxy for EAD and does not fully encompass EAD's geographical boundaries (Figure 4). Regardless, the burden of chronic disease in the Aldine area is substantial and was used to help inform this HIA.

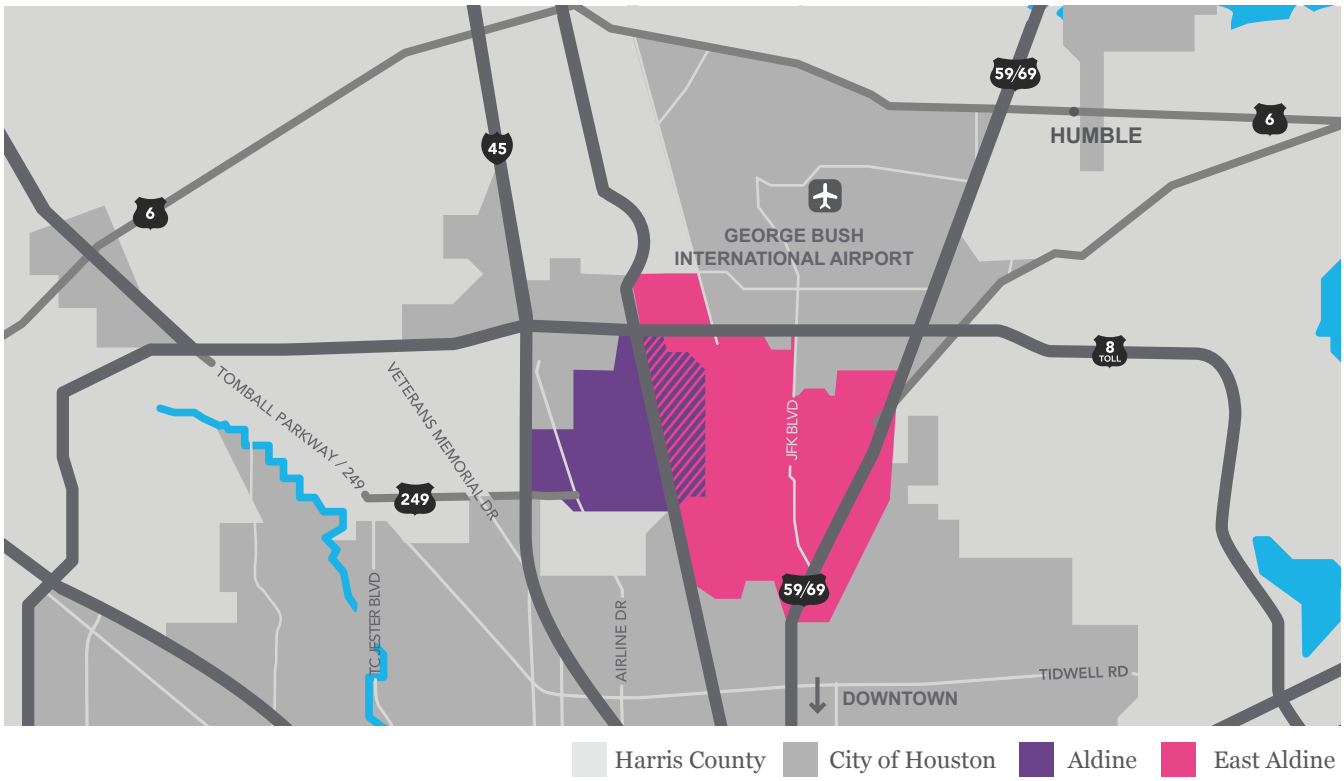


Figure 4

Aldine (Census Designated Place) and EAD, Geographic Boundaries in Harris County, TX

TABLE 2. MORTALITY RATES PER 100,000 FOR THE LEADING CAUSES OF DEATH IN HARRIS COUNTY COMPARED TO TEXAS, 2013*			
CAUSE OF DEATH	HARRIS COUNTY (HC) (DEATHS PER 100,000)	TEXAS (TX) (DEATHS PER 100,000)	HC/TX MORTALITY RATE RATIO
HEART DISEASE	166.3	170.7	0.97
CANCER	159.9	156.1	1.02
CHRONIC LOWER RESPIRATORY DISEASES	32	42.3	0.76
STROKE	40.6	40.1	1.01
ACCIDENTS	36.8	36.8	1.00
ALZHEIMER'S	14.4	24.4	0.59
DIABETES	20	21.6	0.93
SEPTICEMIA	24	16.4	1.46
KIDNEY DISEASE	17	15.9	1.07
FLU/PNEUMONIA	15.2	14.4	1.06

*Deaths in Texas for 2013; Texas Health Data online query system.[27]

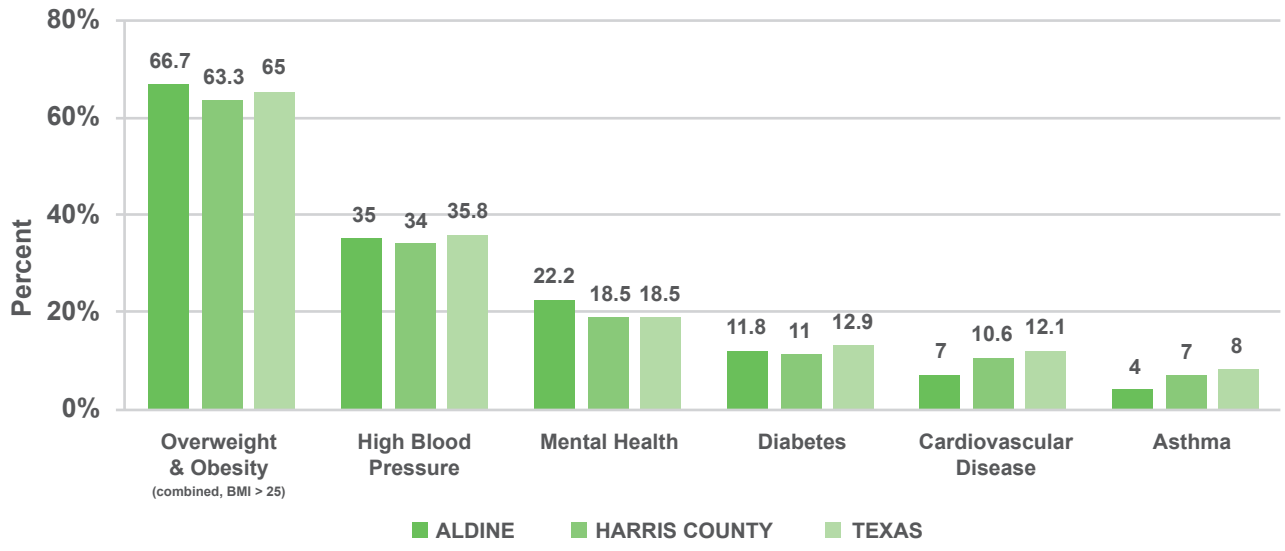


Figure 5

Percentage of Aldine respondents who reported having various chronic diseases compared to Harris County and Texas respondents, 2004-2010.*

**Note: Aldine, Harris County, and Texas respondent frequencies, respectively, for: Overweight & obesity (n=51, 5609, 72276), High blood pressure (n=20, 2697, 35281), Mental health (n=45, 5869, 75604), Diabetes (n=51, 5981, 77234), Cardiovascular disease (n=43, 5419, 70243), Asthma (n=51, 5949, 76810). All BRFSS data analyses represent Harris County, excluding City of Houston (HCxH). Source: Texas Department of State Health Services, Center for Health Statistics, Texas Behavioral Risk Factor Surveillance System, 2004-2010.[28]*

ASSESSMENT FINDINGS AND RECOMMENDATIONS

The HIA Team examined individual components of the town center development plans and the introduction of the town center as a whole, into the community. The health impacts and recommendations are organized and presented as they relate to the following town center components:

Section 1: The proposed services and amenities within the town center
Section 2: The town center as a new point of interest in the community, including associated health and economic impacts

Overall, the HIA Team predicts the new town center will likely have a positive health impact on the community. However, many of these health benefits are contingent upon additional actions that EAD should consider in the development, design, and programming of the town center and the surrounding area. Thus, recommendations and key actions are provided in each section that may enhance the positive health impacts and mitigate any potential negative health impacts.

SECTION 1: HEALTH IMPACTS AND RECOMMENDATIONS RELATED TO THE PROPOSED TOWN CENTER AMENITIES AND SERVICES

The town center development aims to provide a number of amenities and services to the EAD community. These aspects of the development are predicted to have three main health impacts, which are described in the following sections: (i) improved access to healthcare, (ii) improved access to healthy foods, and (iii) improved access to recreational facilities. In addition to these health impacts, these services and amenities play a role in providing points of interest to attract people to the town center, whether it is on foot or by car, the implications of which are discussed in Section 2.

I. IMPROVED ACCESS TO HEALTHCARE

Health Impact. The inclusion of Vecino Health, a Federally Qualified Health Center (FQHC), in the town center will likely result in positive health impacts on the EAD population (Figure 6). There is strong scientific evidence to support this association, however, the magnitude of association is limited (see the Health Impact Table in the Technical Appendix for more information on the methods used to evaluate the scientific evidence, including the definitions of impact used).

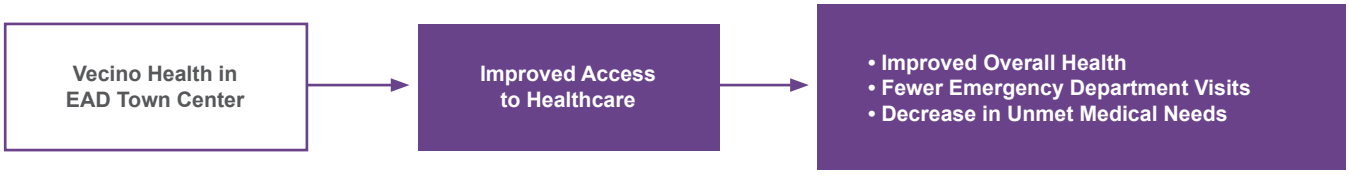


Figure 6

Health pathway for the relationship between Vecino Health (a Federally Qualified Health Center) and improved access to healthcare, resulting in improved health outcomes for the EAD community.

Rationale & Findings. FQHCs provide primary care services to medically underserved communities.[29] There is strong evidence that supports the relationship between the presence of FQHCs and:

- improved access to care, resulting in improved overall health;[30]
- fewer emergency department visits;[31] and
- decreased unmet medical needs,[32] especially for uninsured and underinsured patients.[33,34,35,36]

Health centers also have the potential to reduce racial disparities in healthcare[37,38]. Access to quality care, in turn, can help to eliminate disparities in health as well as improve the quality and number of years of life.[39]

Access to healthcare and specifically preventive care were identified as priority health concerns in EAD by community members and stakeholders. While there are other clinics in close proximity to the town center, some community members have indicated that these services are not sufficient. This is supported by the fact that the majority of the census tracts in EAD are designated as Medically Underserved Areas by the Health Resources and Services Administration – an agency of the U.S. Department of Health and Human Services. Travel to a doctor's appointment was also brought up as an issue, especially burdensome for the elderly, low-income population who participated in the focus groups.

ALDINE COMMUNITY INDICATORS

- 45% of Aldine respondents have no healthcare coverage, compared to Texas (20%) and Harris County (excluding City of Houston, "HCxH") (19%) respondents.[40]
- 12% more Aldine respondents reported an inability to see a doctor due to monetary constraints in the past 12 months compared to Texas and HCxH respondents.[41]
- Fewer Aldine respondents reported being in 'good general health' as compared to Texas and HCxH respondents.[42]
- Current financial strains on the Harris Health System demonstrate an inability to adequately serve all healthcare needs of this community.[43]

RECOMMENDATIONS

- EAD, through its Public Health & Neighborhood Services Committee, should encourage engagement of community health workers to promote linkages between Vecino Health and EAD community resources, especially for adults with high blood pressure and adults with prediabetes or at high risk for Type 2 diabetes. For example, working with Vecino Health to provide prescriptions for fresh produce from the proposed town center grocery store, also known as a Fruit and Vegetables Prescription ("FVRx®") Program, could be encouraged.
- EAD should consider promoting an increase in community programs linked to Vecino Health, including chronic disease self-management programs and other types of community programs, especially those offered by Neighborhood Centers, Inc. and Lone Star College, which will be in close proximity to Vecino Health in the town center.
- Vecino Health should increase implementation of quality improvement processes, as well as increase the use of team-based care as they do at their other locations in the Houston region.

II. IMPROVED ACCESS TO HEALTHY FOODS

Health Impact. Including a grocery store within the proposed town center will potentially have a positive health impact on the community by providing additional access to fresh foods in EAD (Figure 7). The long-term health impacts resulting from consumption of healthy foods, such as preventing or reducing prevalence of obesity and diabetes, is contingent upon other factors, such as food quality, pricing, placement, and promotion strategies for healthy eating.

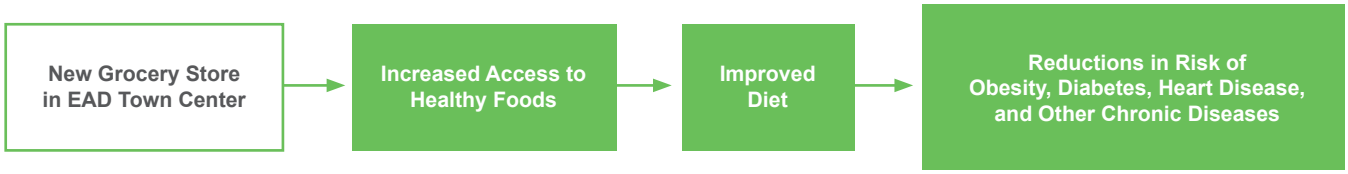


Figure 7

Relationship between a new grocery store and improved health

Rationale & Findings. A healthy diet is essential for reducing the risk of chronic diseases, such as obesity, heart disease, Type 2 diabetes, hypertension, and certain types of cancers.[44] A greater density of supermarkets or grocery stores may provide greater access to healthy foods if the store offers fresh, quality produce at an affordable price for its community members.[45] Studies have shown that people without supermarkets near their homes are less likely to have a healthy diet than those with more stores[46] and that easy access to supermarket shopping is associated with a significant increase in household use of fruits (i.e., household use defined as all foods used from the home food supply, including foods used within the home and foods prepared at home but taken elsewhere to eat).[47]

Food store access by itself, as measured by proximity or density, generally has a limited impact on healthy food choices.[48,49] People choose what to eat based on a combination of considerations, such as food prices, income available to spend on food, tastes developed in early childhood or later in life, and the need for convenience.[50] Furthermore, since the literature has shown many adults lacking basic knowledge of daily nutrient intake limits despite public education efforts, the need for complementary changes (e.g., nutrient limits, signage/menu labeling, placement, and pricing strategies) to the food environment is necessary.[51,52,53,54,55,56,57] In other words, if healthy foods are not available or within easy reach, of poor quality, or more expensive relative to other foods, consumers are less likely to purchase them.

Multiple key informant interviewees and focus group participants stated the two existing grocery store options in the neighborhood, especially the grocery store closest to the town center, did not consistently offer good quality produce. Interviewees also specifically stated that households with access to a car are likely to drive outside EAD to purchase a majority of their groceries. Five of the 11 key informants identified healthy eating or the lack of access to healthy foods as a priority health issue in EAD. However, it was also pointed out that not everyone wants to eat healthy food. On more than one occasion, a high fat, high calorie diet stemming from preferences for certain traditional and/or cultural foods was cited as a possible barrier to healthy eating. HCPH's Healthy Dining Matters staff members who have worked in the community for the past few years also stated: "The general attitude from restaurant staff and owners we have met with is that healthy eating is not a priority. They are aware the food they serve is not healthy, but they are discouraged to serve healthy food because they are afraid their customers won't buy it. Consumers we have interviewed have said they don't take that extra step to make the healthy choice due to lack of convenience or the lack of perceived severity of obesity as a major health issue."

RECOMMENDATIONS

- EAD staff should consider in their selection of a grocer (e.g., through the Request for Proposals (RFP) or contract process) their ability and willingness to collaborate with local healthcare centers, including Vecino Health, to incorporate prescriptions for healthy foods and educational efforts (e.g., Promotoras to incorporate nutrition education, such as healthy food demonstrations, that are culturally sensitive and tailored to the community).
- EAD should identify opportunities to incentivize a quality and affordable grocery store to come to the town center, for example, a public-private partnership to increase healthy food access.[58]

EAD COMMUNITY INDICATORS

- Aldine is currently listed as a food desert by the United States Department of Agriculture.[67] The two main supermarkets in the area are Mi Tienda and Kroger. The closest alternative is a Wal-Mart, about a 30 minute bus ride away.
- This is compounded by the fact that Aldine has a higher percentage of people who are at risk of being overweight or obese compared to Harris County and Texas.[68]

- As part of the selection process for a grocery store in the town center, EAD staff and its partners should consider incorporating contract requirements as part of the lease or RFP process to promote selection[59] of healthy food items (i.e., fresh fruits and vegetables). One example is requiring or encouraging grocery store lease applicants to apply simple no- to low-cost placement strategies to increase selection, such as placing fruit at cash registers instead of candy or other unhealthy food items. For other strategies and ideas, please visit the Healthy Food Access Portal.[60]

III. IMPROVED ACCESS TO RECREATIONAL FACILITIES

Health Impact. Given the current evidence of low physical activity levels among youth in EAD, additional recreational facilities including the playground, open space, and walking trail may promote and encourage increased physical activity among youth and adult community members (Figure 8).

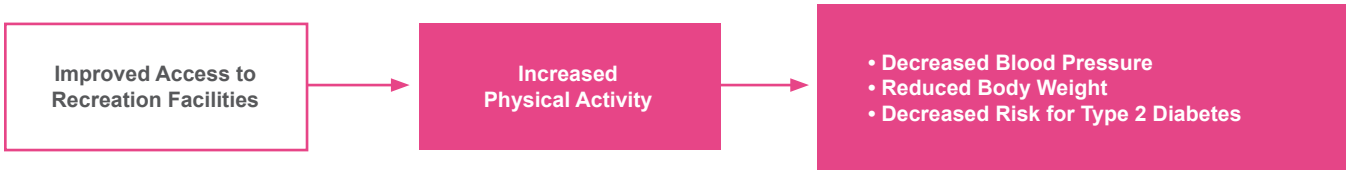


Figure 8

Relationship between improved access to recreation facilities and health outcomes

Rationale & Findings. There is sufficient evidence supporting the association between access to recreation facilities and increased physical activity, including travel and leisure physical activity,[61] as well as transportation walking.[62] Among youth, the presence or perceived presence of recreation facilities, especially parks and athletic courts, was associated with physical activity.[63,64,65,66]

Among community interviewees, physical activity and places for recreation were prioritized lower than other health and safety issues (Figure 3). But, the lack of safe connections to existing parks was specifically stated by two interviewees. Lack of physical activity, lack of opportunities for play, and a need for more recreational spaces were also mentioned by key informant interviewees. With the town center directly adjacent to Keith-Wiess Park and nearby schools, there is an opportunity to utilize existing infrastructure to create better connections to the surrounding community. However, the current community perceptions of Keith-Wiess Park is that it is unsafe, which may be a barrier to access and utilization.

RECOMMENDATIONS

- EAD staff can promote the use of recreational facilities among all town center entities through programming, maintenance, and safety measures by, for example, working with the Harris County 911 Call Center to promote outdoor walking breaks among their staff and/or designating a walking path within the town center with signage and lighting to encourage utilization.
- EAD staff should work with the City of Houston to increase safe access points from the town center to Keith-Wiess Park through wide, defined trails with adequate lighting (e.g., utilizing Crime Prevention through Environmental Design (CPTED) standards).

EAD COMMUNITY INDICATORS

- Aldine Independent School District (ISD) has a higher percentage of girls and boys not achieving the Healthy Fitness Zone (HFZ) standards as compared to students in Harris County and Texas.[69]
- Youth in Aldine ISD have a high risk of being overweight or obese.[70]

HEALTH BENEFITS OF PHYSICAL ACTIVITY

Physical activity is strongly associated with long-term health benefits, including:

- Regulating energy fat balance and controlling body weight[71]
- Decreasing blood pressure and preventing hypertension-related episodes[72]
- Contributing to a reduced risk for Type 2 diabetes and cardiovascular disease and decreasing body weight[73]

Achieving these health outcomes also requires other behavioral changes, such as those relating to diet.

OTHER HEALTH IMPACTS RELATED TO EAD'S TOWN CENTER FACILITIES

Other potential health impacts related to other town center tenants and facilities that were outside the scope of this HIA include:

TOWN CENTER TENANT	POTENTIAL HEALTH IMPACT
LONE STAR COLLEGE	Workforce development and higher educational attainment are also both, associated with improved long term health outcomes.
SHERIFF'S 911 CALL CENTER	Greater presence of police officers may enhance safety and security of nearby businesses and residents, resulting in greater utilization of the park and town center services and amenities.
NEIGHBORHOOD CENTERS, INC.	As a regional community-based organization recognized for positively impacting community development in low-income and underserved neighborhoods, their proposed "makers-space" may encourage greater community engagement and social cohesiveness by providing a space for community mmbers to interact with one another and share their time and resources.

By partnering with these entities, EAD can better prioritize positive social and economic outcomes for the community.

SECTION 2:

HEALTH IMPACTS AND RECOMMENDATIONS ASSOCIATED WITH THE TOWN CENTER AS A NEW POINT OF INTEREST IN THE COMMUNITY

The town center amenities and services will attract a wide array of visitors from EAD and beyond. The current town center plans have incorporated elements that accommodate both vehicles and pedestrians within the site, but there have been few considerations made for non-vehicular travel to the site. This section examines the health impact of the town center as a new point of interest introduced into the community. The two main health outcomes that were identified by the HIA Team, that are related to these changes are:

I. Increased physical activity from active transportation to the town center, due to mixed land use development
II. Increased injury due to pedestrian-vehicle collisions

Many planned and unplanned factors have the ability to affect these results and are detailed in the following sections. These vary from sociodemographic characteristics of the community and proximity to schools, to design features that can help control traffic and lighting. To help communicate the number of factors that are involved, Figure 9 outlines these relationships and is meant to serve as a guide and reference point for this section.

I. INCREASED ACTIVE TRANSPORTATION AND PHYSICAL ACTIVITY THROUGH MIXED LAND USE AND EXISTING CONNECTIVITY

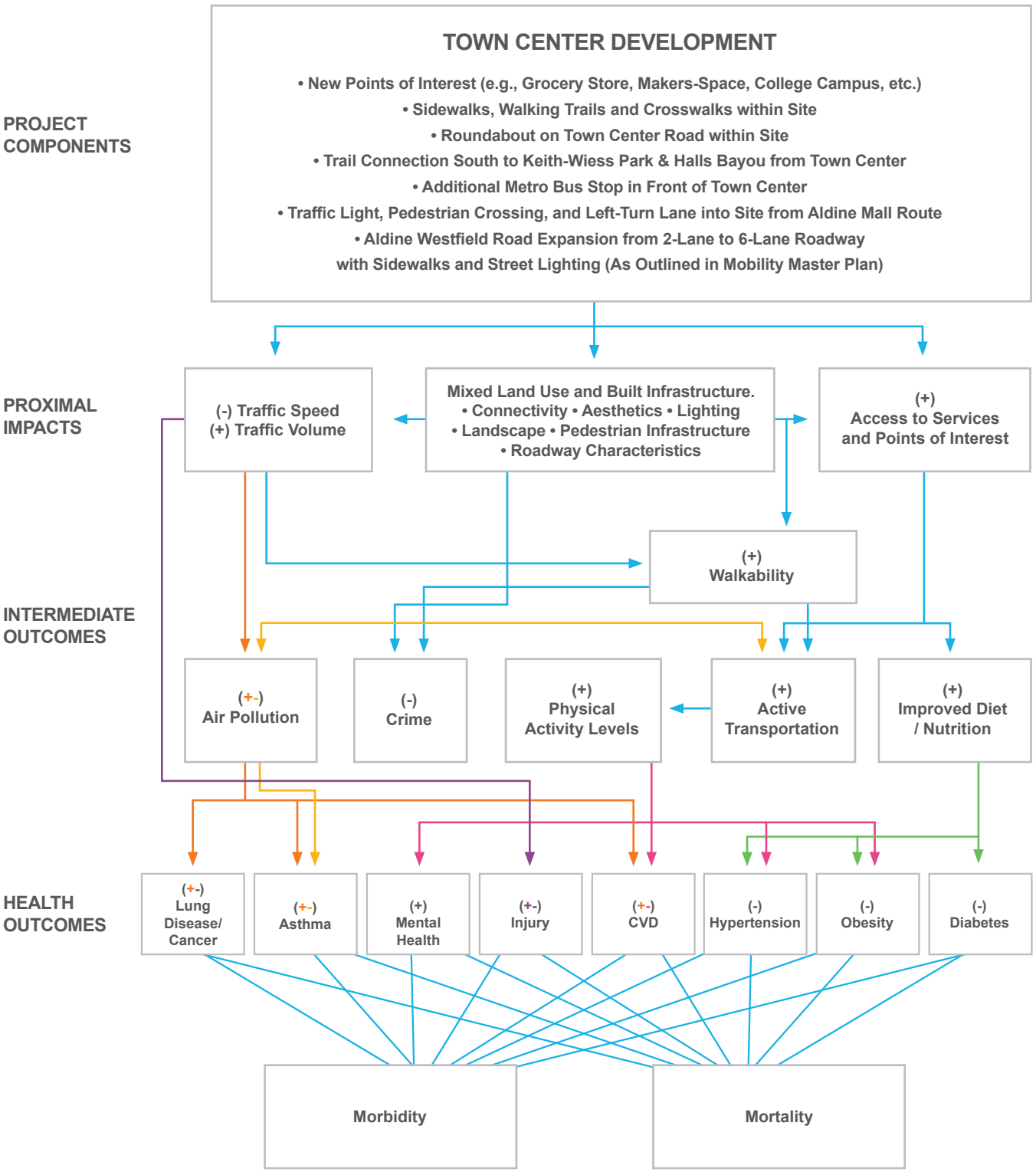
Health Impact. Increased mixed land use from the addition of the town center and high demand for safe, non-motorized transportation is expected to increase physical activity in the community. Additionally, existing and proposed pedestrian connectivity routes and access points within and surrounding the town center are likely to increase active transportation and physical activity (Figure 10). However, without inclusion of other key built environment features that have been shown to increase the likelihood of walking for choice, these impacts will likely affect those who walk because they do not have another mode of transportation. These are discussed in Call Out Box 1.

Figure 10

Overview of the relationship between mixed land use, connectivity, and physical activity.

Figure 9

Health Pathway for the East Aldine District Health Impact Assessment, Harris County, Texas, 2015-16.



Rationale & Findings. Mixed land use considers the number of points of interest, such as schools, clinics, grocery stores, and restaurants, within close proximity to the home.[74] There is sufficient scientific evidence that an increased mixture of destinations within close proximity to each other increases the walking and biking behavior of neighborhood residents.[75,76,77,78,79] While in addition to the fact that increasing mixed land use impacts travel behavior for populations, key community indicators and community feedback revealed EAD has a disproportionate number of people who do not have the opportunity to choose between driving and other modes of transportation. Populations with lower incomes, such as students, older adults on a fixed income, or the unemployed, may not have easy access to cars and are much more likely to walk, bike, or use transit for their daily activities.[80,81,82,83,84,85,86]

INCREASED WALKABILITY FROM MIXED LAND USE AND CONNECTIVITY INCREASES TAX REVENUES FROM RETAIL SALES

Stores that make their locations easily accessible to pedestrians and bicyclists, as well as change their external design to encourage outdoor social space see significant increases (by 49% to over 400%) in sales.[98]

- Assuming EAD builds appropriate pedestrian and bicyclist transportation access to and within the town center, it is estimated that the retail locations may see an 80% increase in sales. This increase in sales is estimated to bring an additional $207,887 in sales tax revenue to EAD over the 30 years after the development is completed.
- Making the town center more pedestrian- and bike-friendly will likely increase sales for retailers, as well as increase sales tax revenue for EAD.

This HIA found the existing demand and resulting increase in active transportation to the town center will lead to health and economic benefits due to increased physical activity of visitors. Walk Score®,[87] an objective, publicly available tool that measures access to mixed land use, is calculated based on the variety and distance to five categories of commercial and frequently visited points of interest: educational, retail, food, entertainment, and recreational parks and gyms.[88] The HIA Team predicts the town center will increase the Walk Score of the properties within walking distance of the town center by 21 points (from 33 points to 54 points). Additional consideration was given to the points of interest that will be added to the town center and the population that the points of interest will attract.

While not explicit, Walk Score also takes into account the connectivity of an area as it assesses points of interest within walking distance. Connectivity refers to the degree to which streets or areas are interconnected and easily accessible to one another[89] and can reduce travel time by providing the most direct route between destinations. Providing a well-connected network of trails, sidewalks, and designated bicycle lanes is a key element for encouraging walking and biking.[90,91] And, there is sufficient scientific evidence that connectivity increases active transportation.[92,93,94] Pedestrian and bicyclist infrastructure also provides safety from vehicles and improves the aesthetics of the neighborhood.[95,96,97]

A Rapid Environmental Scan Tool (REST) and connectivity analysis were also conducted to assess the existing pedestrian infrastructure and connectivity in EAD and predict the likelihood of walking to the town center. Analysis of the REST data, coupled with additional observational data and community input show that people still walk regardless of existing or poor infrastructure (e.g., due to no other alternative). While existing pedestrian and bicycle infrastructure is inadequate (Appendix B, Figure B-2), and the majority of contiguous sidewalks are limited to Aldine Mail Route (Appendix B, Figure B-3 and B-4), the road network is sufficiently connected for walking distances (based on density of intersections and block length, relative to other neighborhoods) (see Technical Appendix for more detail). Albeit, the road network should not be used for walking as it does not have adequate safety measures needed. Key points from this analysis revealed:

- with the existing road network, between 4,081 and 7,579 people are within walking distance (0.4-0.7 miles) of the town center (Appendix B, Figure B-3);
- however, that number greatly decreases to a range of zero and 1,852 when considering who is connected by existing sidewalks (Appendix B, Figure B-4).

INCREASE IN MIXED LAND USE INCREASES HOUSING VALUES IN EAD

Houses in more walkable neighborhoods and within a short distance to daily shopping and recreational destinations have higher values than comparable homes in less walkable neighborhoods.[100]

- The town center development is expected to increase the Walk Score® of the properties within walking distance to the town center by 21 points. This will result in an increase in the average home value within walking distance of the town center from $102,000 to $115,470.
- This increase in home values due to the town center is expected to result in $13,401,746 dollars of additional property tax revenue over the 30 years after the development is completed.

The difference between these two ranges is analyzed further in the following section.

Nonetheless, walking for transportation will likely increase in EAD given the new town center will add points of interest for the community. The health benefits expected from this increase in physical activity among the EAD population will include a reduced incidence (see Table 1 for the definition of incidence) of:

- Heart disease
- Diabetes
- Breast cancer
- Colon cancer
- Asthma

The HIA team measured these effects in Disability-Adjusted Life Years (DALY). One DALY is equivalent to one year of healthy life lost.[99] The disease risk reductions due to walking are expected to result in:

- $2.7 million in cost savings over the 30 years after the completion of the town center (see Technical Appendix for more detail).

RECOMMENDATIONS

Overall, EAD should consider encouraging more mixed land use developments given the potential health and economic impacts for the district and its community members. Other key recommendations for EAD include:

- Ensuring points of interest within the town center retain their quality and desirability for residents. Specifically, EAD has control over the commercial development going into the town center and can work to include a good quality grocery store.
- Ensuring walking paths leading from outside the town center connect directly to the points of interest within the town center to increase ease of access, as this may increase the likelihood of pedestrian activity.[101]
- Keith-Wiess Park could be a barrier to connectivity, especially to communities south of the town center; EAD should partner with the City of Houston to ensure the park is an asset and to prioritize connections through the park for pedestrians and bicyclists.

While connectivity and mixed land use have alone been shown to predict walkability, to achieve a fully walkable environment and a significant increase in active transportation, other factors, such as aesthetics, safety from crime, safety from vehicles and attitudes of walking, need to be addressed to determine the likelihood of walking (Call out box 1). This is especially important for addressing walking behavior of community members who can choose between walking and other modes of transportation. Therefore, the HIA Team recommends that EAD work to achieve other walkable community design features in prioritized locations (Call out box 1).

TOWN CENTER MAY LEAD TO IMPROVED AIR QUALITY FROM INCREASE IN MIXED LAND USE AND ACTIVE TRANSPORTATION

Air quality is an issue that is continually raised by residents and EAD staff, including concerns related to the light industrial businesses, trash burning, and traffic in the area. This is backed by recent evidence that has shown man-made emission sources of ozone, including motor vehicle exhaust and gasoline vapors, to be at high levels in the Aldine area.[102,103] These environmental conditions put residents at an increased risk for a number of chronic conditions, such as asthma, cancer, heart disease, chronic lung disease, reproductive complications, and stroke.[104,105,106,107,108,109,110]

- Given that car trips are substituted by non-motorized transportation when points of interest are within 400m of the home[111] this HIA predicts that mixed land use at the town center will encourage a travel mode shift from motorized to non-motorized transport for many local residents.
- Over time, the effects of increased mixed land use in EAD, including the town center, and additional efforts in the community to support non-motorized transportation could contribute to reduced emissions and improved air quality and health.

II. INCREASE IN PEDESTRIAN INJURY

Health Impact. The town center will likely increase both pedestrian and vehicular traffic, which could result in a greater number of pedestrian-vehicle collisions. This is expected to disproportionately impact community members who rely on walking for transportation.

Figure 11

Relationship between increased traffic and pedestrian injury

Rationale & Findings. Increased vehicle traffic and pedestrian volumes are strong predictors of collisions.[112,113,114,115] By increasing points of interest from the addition of the town center, it is expected that both active transportation and trips by car will increase in the area, requiring additional attention to pedestrian and bicyclist safety. Those who live within walking distance (0.7 miles) of the town center are expected to increase their daily walking by an average of three minutes per day.[116] The increase in traffic will likely impact not only those walking to or within the town center, but also those walking in the surrounding area because of the additional vehicular traffic coming in and out of the center.

EAD TOWN CENTER DESIGN FEATURES MITIGATING INJURY

The town center was designed so that once visitors arrive, they can travel safely on foot throughout the site. Some of the design elements include crash reduction factors and traffic calming additions to help control vehicle speeds and decrease the likelihood of pedestrian-vehicle accidents, such as:

- Roundabouts
- Curvilinear streets
- Large shade-providing trees along roadways
- Sidewalks
- Mid-block pedestrian crossings with pedestrian right of ways

The traffic study completed by Traffic Engineers, Inc. for the town center development predicts a 62% increase in traffic on Aldine Mail Route and a 16.3-49.2% increase on surrounding side streets.[117] Along Aldine Westfield Road, which will be expanded from a two-lane road to a six-lane road, the HIA Team calculated a 15% traffic volume increase by utilizing a previously published traffic equation for the expected traffic volume increase due to a lane increase.[118] Due to this increase in traffic volume, the HIA Team predicted a 25.2% increase on Aldine Mail Route and 7.2% increase on Aldine Westfield Road in pedestrian-vehicle collisions, totaling 13 additional crashes over the next 30 years (Table 3). These predictions were based off historical collision data from 2007-2015 (Appendix B, Figure B-6). The proposed sidewalks along Aldine Westfield Road and signalized crosswalk to the town center from Aldine Mail Route are expected to help reduce collisions. Albeit, without further investigation into the cause of the historical crashes along Aldine Westfield Road and Aldine Mail Route, it is difficult to predict the true or causal health impact.

TABLE 3: PREDICTED CHANGES IN PEDESTRIAN-VEHICLE COLLISIONS IN EAD, 2015-16*			
	PERCENT INCREASE IN COLLISIONS DUE TO INCREASED TRAFFIC VOLUME	NUMBER OF PEDESTRIAN-VEHICLE COLLISIONS, 2007-2015	NUMBER OF PREDICTED PEDESTRIAN-VEHICLE COLLISIONS IN THE 8 YEARS POST-TOWN CENTER COMPLETION
ALDINE MAIL ROUTE	25.2%	11.0%	13.8%
ALDINE WESTFIELD ROAD	7.2%	6.0%	6.5%
OTHER SIDE STREETS	2.2-7.8%	2.0%	2.3%

* These data represent pedestrian-vehicle collisions and their expected increase due to increases in traffic volumes. Due to different effects of traffic on bicycle-vehicle collisions, changes in these collisions were not included in this analysis. These predictions also do not account for potential future safety measures, such as installation of new sidewalks, crosswalks and lighting, nor do they account for potentially new roadway barriers, such as the proposed Aldine Westfield Road expansion, which would also increase traffic volume.

Pedestrian-vehicle collisions resulting in injury or death is a considerable concern among community members in the area. Recent pedestrian-vehicle collisions have resulted in the deaths of school-aged children. In interviews and focus groups, a number of potential causes were identified:

- Unsafe driving behavior (e.g., exceeding the speed limit, passing on two-lane roads, not yielding to speed or school-zone signage)
- Insufficient pedestrian infrastructure (e.g., lack of sidewalks and crosswalks with appropriate lights, such as in-roadway warning lights)
- Lack of lighting (e.g., neighborhood roads often lack street lighting)
- Pedestrian behavior due to lack of infrastructure (e.g., crossing streets without proper crosswalks, walking in the road due to absence of sidewalks)

Many of these concerns were substantiated by conducting a thorough examination of the existing pedestrian infrastructure (i.e., REST analysis). Outside of Aldine Mail Route, very few sidewalks exist in the community. Furthermore, there is little street lighting in certain neighborhoods, and few intersections have pedestrian crossings. Related to the town center, one crosswalk on Aldine Mail Route has been planned for the main entrance, along with a pedestrian access point from Fall Meadows Lane, which could help to reduce collisions by up to 25% at intersections.[119]

However, plans and designs have focused primarily within the town center, and very little has been proposed to make streets surrounding the town center safer for pedestrians. Without additional mitigation, it is likely that additional injuries can be expected.

The economic impact of these increased injuries will amount to approximately $4.4 million in wage productivity losses, medical expenses, administrative expenses, motor vehicle damage and employers' uninsured costs.[120]

EAD COMMUNITY INDICATORS

The rate of pedestrian deaths for the years 2000 to 2008 in EAD falls in the highest rate category as compared to other areas in Harris County (22-28 deaths per 100,000 population, as compared to the lowest rate category of 4-6 deaths per 100,000 population; unadjusted estimates) (see Appendix B, Figure B-7).

RECOMMENDATIONS

There is strong evidence that pedestrian-vehicle collisions can be averted with appropriate changes to the streetscape, commonly referred to as Crash Reduction Factors (CRFs).[121] The effectiveness of specific CRFs and their application are based on a number of indicators, such as causes of prior crashes and road type. Additional analysis by a traffic engineer is necessary to determine exact CRFs for each project; however, there are specific road segments that the HIA Team identified as priority areas for this HIA (Figure 12):

- Places where pedestrian-vehicular collisions are more likely to occur (i.e., "hot spots"), such as Aldine Mail Route and Aldine Westfield Road;
- Routes taken by populations who are more likely to walk, such as between the town center and schools, and between neighborhoods and transit stops; and
- On segments where informal paths already exist, but sidewalks do not.

Within the town center, EAD worked with Harris County Public Infrastructure Department to obtain approval for CRFs, specifically mid-block pedestrian crossings where pedestrians have the right of way. Traditionally, there are some CRFs that are not typically used within Harris County, and therefore, no existing policy framework is in place to be able to approve them. Thus, interim changes can be made at a lower cost to test out certain CRFs or updates to the built environment by taking a tactical urbanism approach. Tactical urbanism methods apply temporary changes to the built environment with low-cost materials (e.g., paint) or impermanent features (e.g., large planters) and have been used successfully to pilot test potential permanent changes. This can be done in conjunction with community groups, schools, and neighborhoods with support from required agencies.[122]

In addition to the CRFs, there is a need to address attitudes and behaviors related to inattentive driving in the area, as this was identified as a potential root cause of pedestrian-vehicle collisions. This could be accomplished by increased policing of vehicular traffic, education programs, and greater visibility (e.g., with flashing lights) and frequency of signage. It is also recommended that EAD continue to work with community members and partners to advocate for street infrastructure that is supportive of all modes of transportation. This can be done with upcoming projects, such as the expansion of Aldine Westfield Road from two-lanes to six-lanes, by engaging the entities involved throughout the design process. Without adding safe pedestrian crossings to this road expansion project, especially in neighborhoods south of the park and around Aldine Mail Route, the expansion could become a barrier to accessing the town center and Keith-Wiess Park in the future.

CALL-OUT BOX 1. OTHER FACTORS AFFECTING LIKELIHOOD OF WALKING: NEIGHBORHOOD AESTHETICS, VIOLENT CRIME AND WALKING ATTITUDES

NEIGHBORHOOD AESTHETICS

- Neighborhood aesthetics" refers to a resident's perceptions of a neighborhood's attractiveness and safety. While this concept is measured slightly differently across studies, many concluded that neighborhood perceptions are one of the more influential factors that increase the likelihood of walking and its associated health benefits.[123,124,125]
- The town center plans include a number of design features to enhance aesthetics, such as lighting, street trees, and signage. Additional care has been taken to develop design standards to which all buildings must adhere to within the development.
- Outside of the town center development, community members have expressed concern for a number of other features that are perceived to decrease aesthetics: stray dogs, trash and debris in the streets, abandoned or dilapidated housing, lack of lighting, and sexually-oriented businesses close to residential homes. Specifically, in a survey conducted for this HIA among 40 community members at the 2015 EAD Fall Festival, a majority of respondents were concerned about traffic (75%), lack of sidewalks and trails (85%), lack of lighting (88%), and stray dogs (68%).

RECOMMENDATION

Continuing and bolstering existing collaborative efforts with public health, such as nuisance abatement and animal control, can help give continuity between the town center aesthetics and the surrounding neighborhoods.
Recommendation: Promoting community maintenance can also help the area appear more attractive, friendly, and pleasant by eliminating trash, removing vacant houses, and improving front yard maintenance (e.g., cutting down weeds).

VIOLENT CRIME

- Violent crime, defined as an assault, aggravated crime, or murder, makes community members feel unsafe and reduces the number of walking trips.[126,127]
- Community input and survey results pointed towards a perception of high crime in the area, including one apartment complex within walking distance of the town center.
- Table B-1 (Appendix B) shows an increasing trend in violent crime in the EAD area from 2011-2015, with 2015 having the highest total count among the years compared. Assaults and robberies were major contributors.
- A decrease in crime or a perception of a decrease in violent crime in EAD might encourage more physical activity in the area. Extensive work is being done with guidance from the EAD Public Safety Committee and the Sheriff's Office, including a Crime Prevention Through Environmental Design (CPTED) program with apartment complexes in the area.
- 78% of respondents participating in the 2015 Fall Festival survey (n=41) agreed that crime in their neighborhood makes them feel unsafe.

RECOMMENDATION

Built environment strategies, such as adequate lighting, could help reduce 21% of crime in the area.[128] Continued police actions to reduce public drinking and violent crime, especially murders, will help residents feel safer and increase neighborhood walkability.

WALKING ATTITUDES

- Attitudes about travel mode, walking, biking and other physical activities are important influences on an individual's level of physical activity.[129]
- Those who expressed a positive attitude about walking took more walking trips than those with poor attitudes about walking, as well as were more likely to live in residences that were within walking distance to stores. [130]
- While many EAD residents will continue to use non-motorized methods of transportation due to a lack of access to vehicles, negative attitudes about walking or biking may limit the benefits of a walkable neighborhood.

RECOMMENDATION

Health programs aimed at improving attitudes towards walking or biking, such as walk to school programs, are important tools for increasing physical activity.

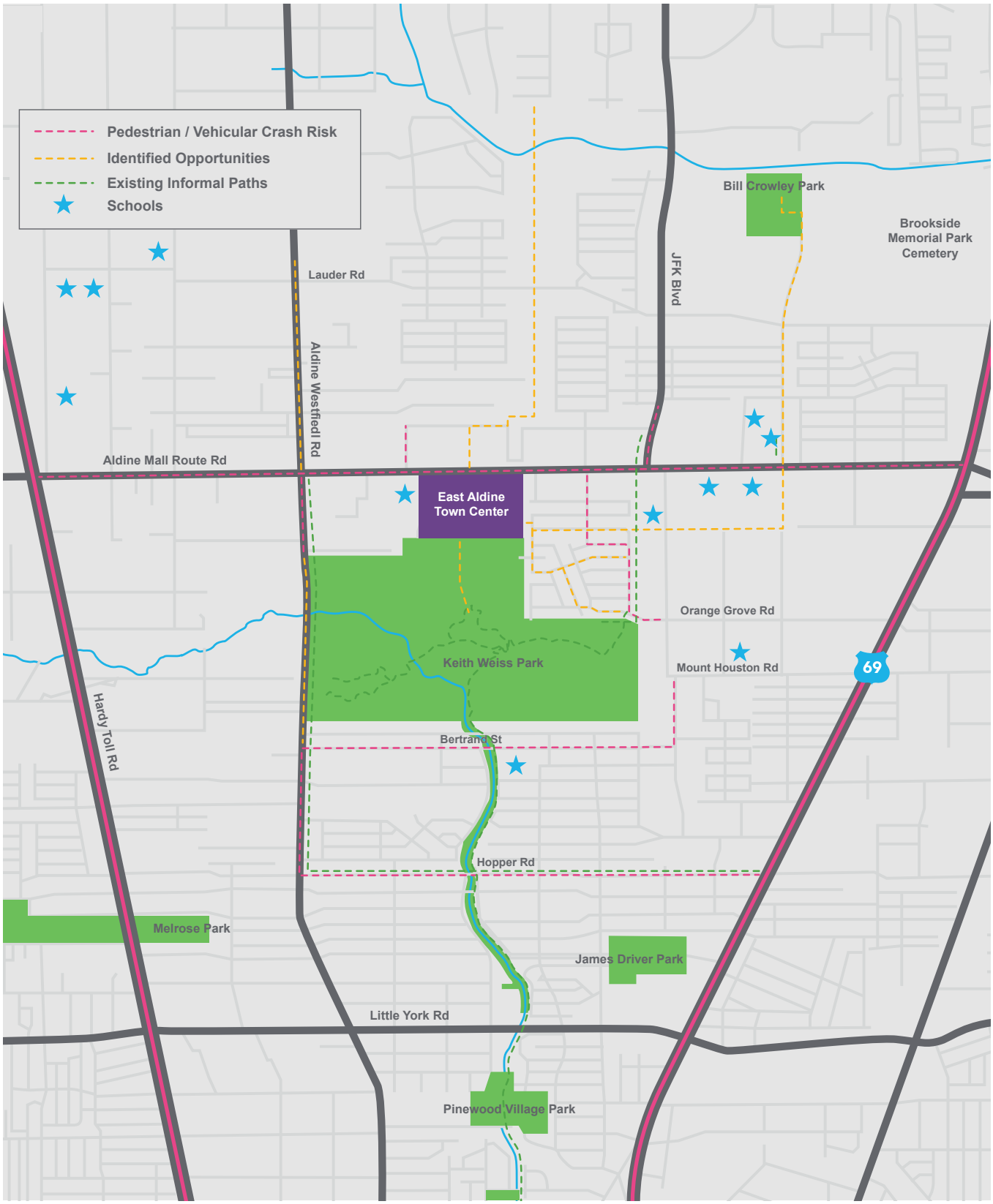


Figure 12

Overview of Priority Segments

CONCLUSIONS & NEXT STEPS

In summary, EAD's efforts to develop meaningful and strategic mixed land use projects, such as the town center, may help improve long-term health outcomes for EAD residents. A master planning document for mobility and recreation trails, developed with equitable input from the local precinct and its community members, could help improve prioritization of funds for future infrastructure projects. For example, a neighborhood-wide approach to creating a walkable community with increased trail linkages for Halls and Greens Bayou. Additionally, a master plan could be a policy driver to advocate for a complete streets initiative, accommodating all street users equitably (e.g., drivers, bicyclists, walkers, and those needing ADA-compliant infrastructure).

EAD should continue to work through their committees and local community-based organizations to advocate for these changes, both internally (e.g., through comprehensive planning) and externally through entities, such as:

- City of Houston, for Keith-Wiess Park and Aldine Westfield Road, which are both city-owned
- Houston-Galveston Area Council (e.g., applying for the Livable Centers Studies) and the Regional Transportation Council
- Precinct 2 and the Texas Department of Transportation for road improvement funding
- Harris County Public Infrastructure Department for approval and implementation of future projects
- Advocacy and community-based organizations, such as Neighborhood Centers, Inc., who bring a voice and narrative to access and mobility related issues
- Aldine Independent School District on efforts related to active transportation to and from schools, connections and routes to the town center from school sites, and school siting

EAD is a vibrant, developing community with opportunities to improve both short- and long-term health behaviors and outcomes of its residents through the built environment. By prioritizing basic services and strategically capitalizing upon opportunities to enhance safe access for all modes of transportation, EAD can achieve an environment that promotes health, safety, and equity for all of its community members.

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